Avaya Solution & Interoperability Test Lab

Application Notes for configuring Avotus ICM Usage Management Version 8.3 with Avaya Communication Server 1000 Release 7.5 and Avaya DBA Toolkit Version 2.0.0.9 – Issue 1.0

Abstract

These Application Notes describe a solution comprised of the Avaya Communication Server 1000 7.5 and the Avotus ICM UM Version 8.3. During the compliance testing, the Avotus ICM UM Application was able to utilize the Avaya Data Buffering and Access (DBA) tool kit version 2.0.0.9 to collect the call records from the Communication Server 1000 and then extract these records from the raw database to formulate it into customer call accounting reports.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

Avotus ICM UM Application is a Call Accounting and Usage Management solution for Enterprise Businesses. The solution comprises of the Avotus ICM UM 8.3 Application server, which is running OS Windows server 2008 R2 Standard 64-bit with service pack 1. Co-resident with the Avotus ICM UM Application is the Avaya DBA tool kit version 2.0.0.9, which is connected to the Communication Server 1000 (hereafter referred to as CS 1000). This DBA tool kit will extract the raw data from the DBA buffer of the CS 1000 and populate it into a database file image ready for processing.

2. General Test Approach and Test Results

The general test approach was to install the Avaya DBA toolkit on to the Avotus ICM UM server which communicates directly to the CS 1000 via network connectivity. Execute the DBA tool kit application to collect the raw CDR (Call Detail Record) from the DBA buffer of the CS 1000. Run the Avotus ICM UM Application to pull the raw call records from the database file and then generate the accounting reports using Avotus Telecom Billing System tool.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The objective of this interoperability compliance testing was to verify:

- Collect various CDR records such as internal, abandon, inbound/outbound via T1/PSTN and SIP trunks, transfer, conference, tandem calls, charge account and authorization code from the CS 1000 raw data via DBA Toolkit application and display in reports.
- Serviceability.

2.2. Test Results

The objectives outlined in the **Section 2.1** were verified and met. All test cases were executed and they all passed. There was one important note below:

- Class of service Call Detail Monitoring Allowed (CDMA) should not be set for CS 1000 phones that are collected by Avotus ICM UM application.

2.3. Support

Technical support for Avotus ICM UM can be obtained by contacting Avotus technical support via email at support@avotus.com or by calling **1-800-840-2580**.

3. Reference Configuration

Figure 1 illustrates the network diagram configuration used during the compliance testing between the Avotus ICM UM 8.3 Application and Avaya Communication Server 1000 Release 7.5. The Avaya CS 1000A was the main CS 1000 switch configured with CDR feature and had the DBA Toolkit the application was connecting to.

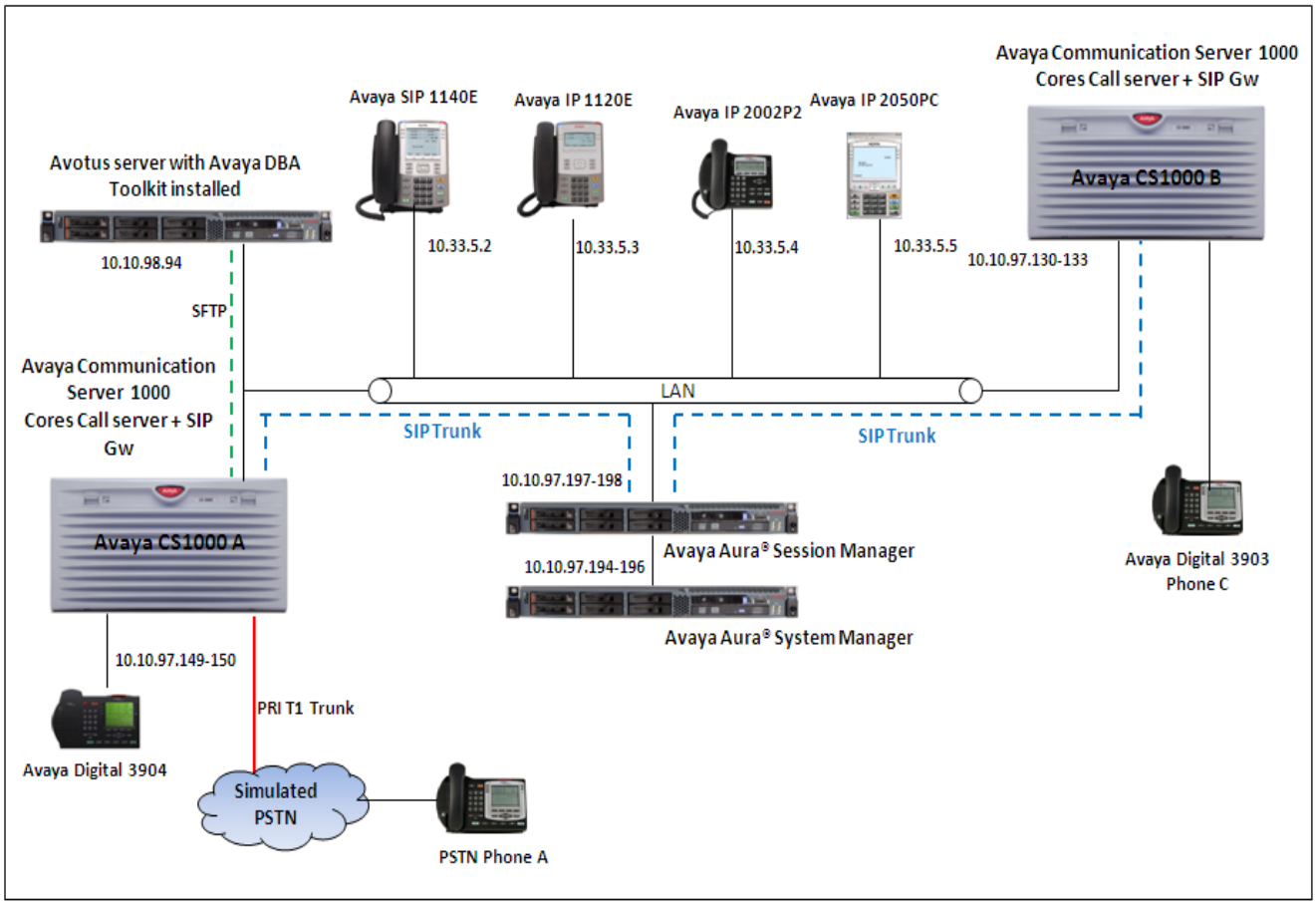


Figure 1: Test Configuration Diagram

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya S8800 server running Avaya Aura® Session Manager Server	6.2 (Build No 6.2.3.0.623006)
Avaya S8800 server running Avaya Aura® System Manager Server	6.2 (Build No: 6.2.0 Software Update Revision No: 6.2.12.1.1822)
Avaya Communication Server 1000E/CPPM	Avaya Communication Server Release 7.5 Q+ Deplist 1 (created: 2012-09-20) and Service Update 1 (Created: Sept 19, 2012)
Avaya DBA Toolkit	2.0.0.9
Avaya IP SIP Phone 1140E	4.3
Avaya IP Unistim Phone 1120E	0x24C8L
Avaya IP 2050PC	3.4
Avaya IP Unistim Phone 2002P2	0604DCN
Avotus IBM Server x3350	Windows 2008 R2 Standard 64-bit SP1
Avotus ICM UM	8.3

5. Configure Avaya Communication Server 1000

This document assumes that the Avaya CS 1000 was properly installed and configured as per the product document, for more information about how to install, configure and administer CS 1000 please refer to **Section 10[1].** This section provides only the steps on how to configure the CDR (Call Detail Record) feature on the CS 1000.

5.1. Check software packages for CDR feature

Use overlay LD 22 to print all necessary software packages that are required for the CDR feature on the CS 1000.

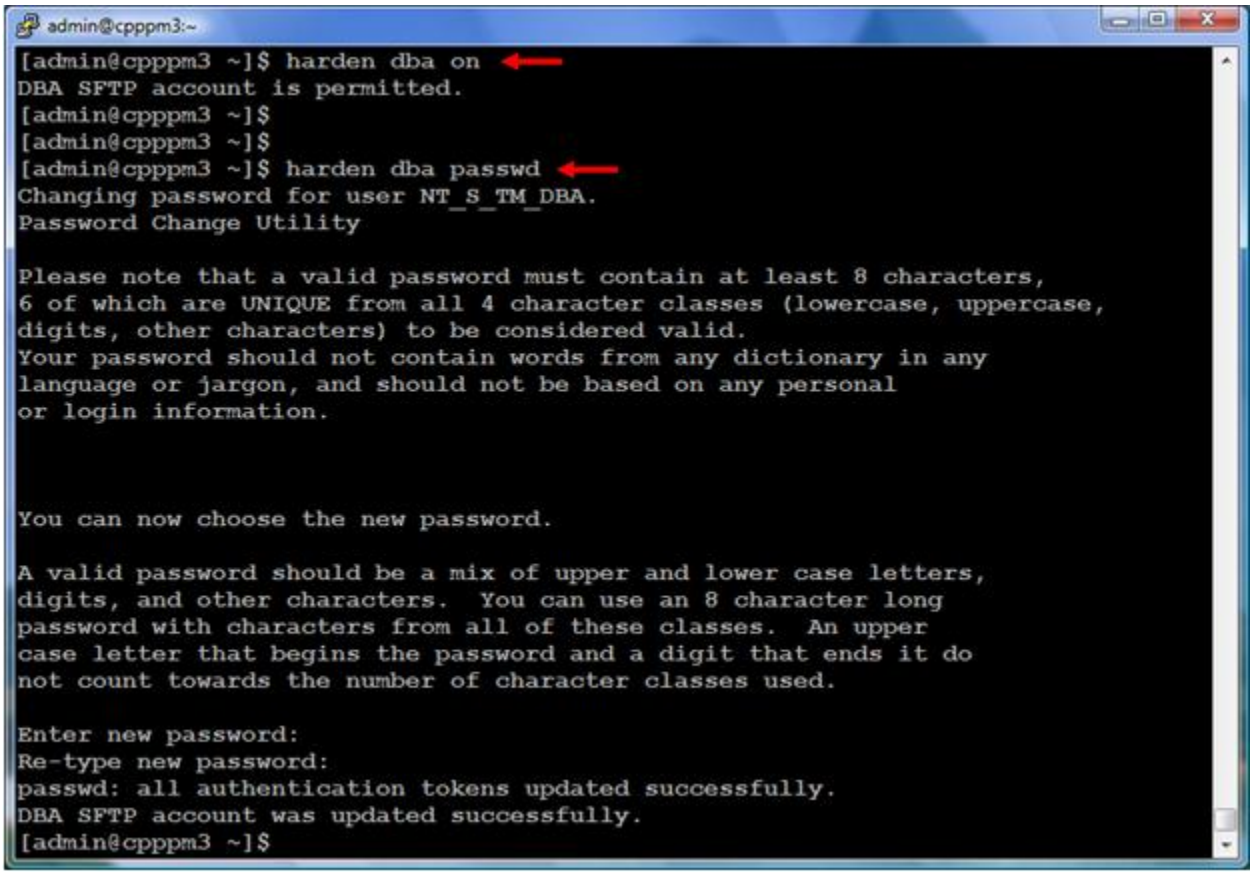
```
>ld 22

REQ  prt
TYPE pkg
CDR                  4   (Call Detail Recording)
CTY                  5   (Call Detail Recording on Teletype Terminal)
CHG                  23  (Charge Account for CDR)
BAUT                 25  (Basic Authorization Code)
ICDR                 108 (Internal Call Detail Recording)
CDRE                 151 (Call Detail Recording Expansion)
FCDR                 234 (New Call Detail Recording)
CDRX                 259 (Call Detail Recording Enhancement)
```

5.2. Administer CS 1000 CDR feature

To enable and set the password for the DBA FTP user on CS 1000 Co-res system, log in to the command line interface (CLI) of Linux base of the Call Server as an administrator and issue two commands below:

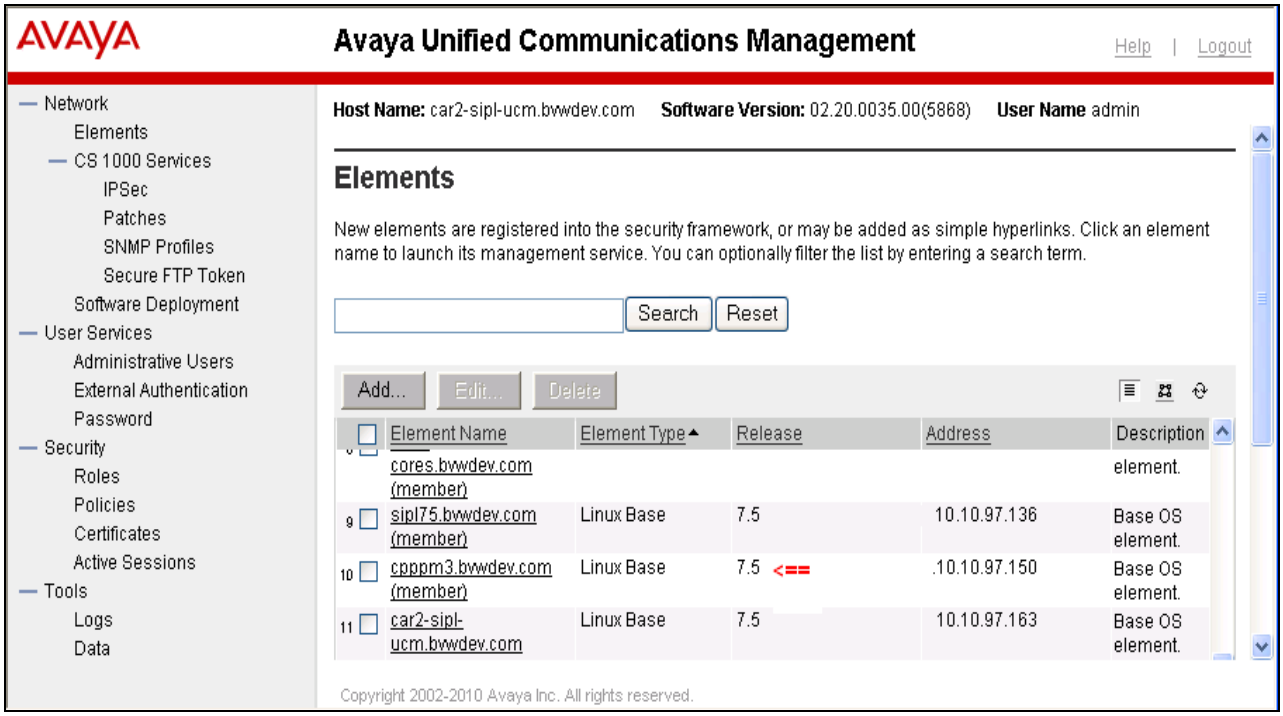
- **harden dba on** → to enable the DBA SFTP account
- **harden dba passwd** → to set the password for NT_S_TM_DBA account

The screen below shows the example of how these commands were executed in the CS 1000 Co-res system.

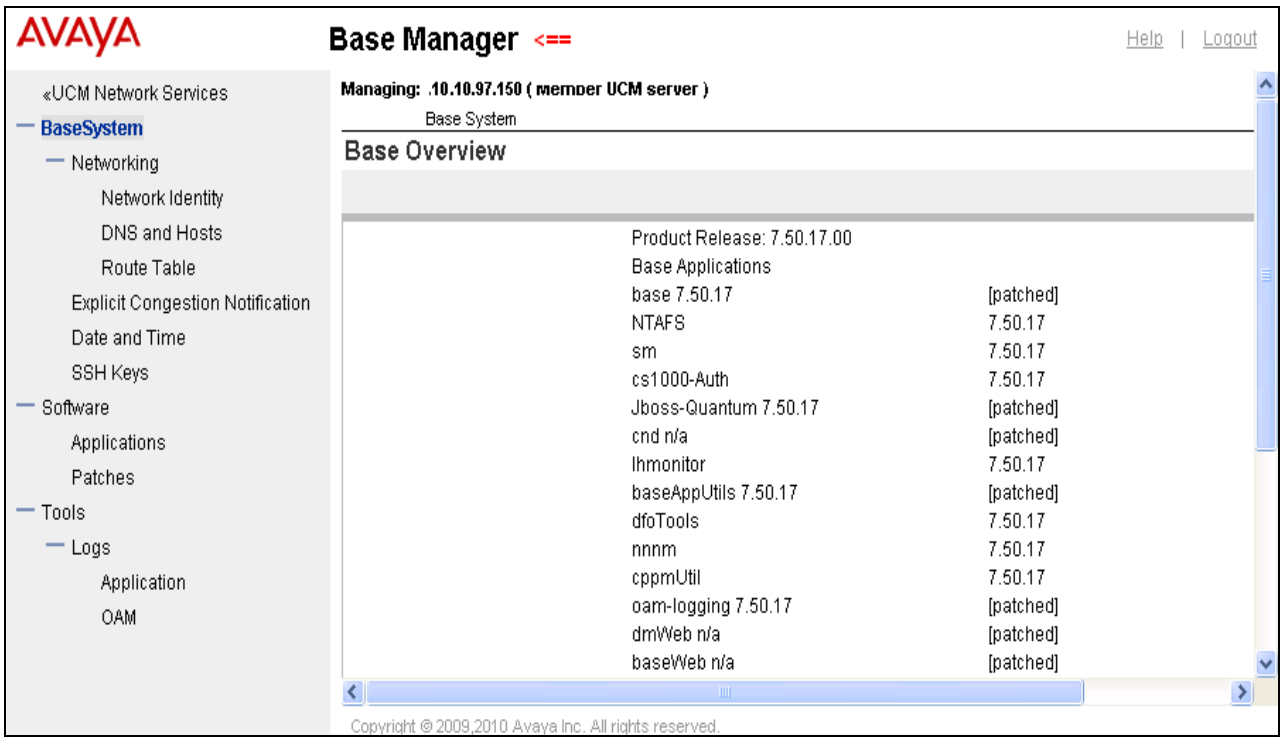


In order for the Call Server Co-res system to allow the DBA Toolkit application to connect to its CDR buffer on the CS 1000, the IP address of the server on which the DBA Toolkit was installed needs to be added in the **Route** table of the **Base Manager** on the Call server. To do that, launch the **Unified Communication Management** (UCM) web page where the Call Server Co-res system was registered to, and from the UCM webpage launch the **Base Manager** web page of the Call Server as shown in the screens below.

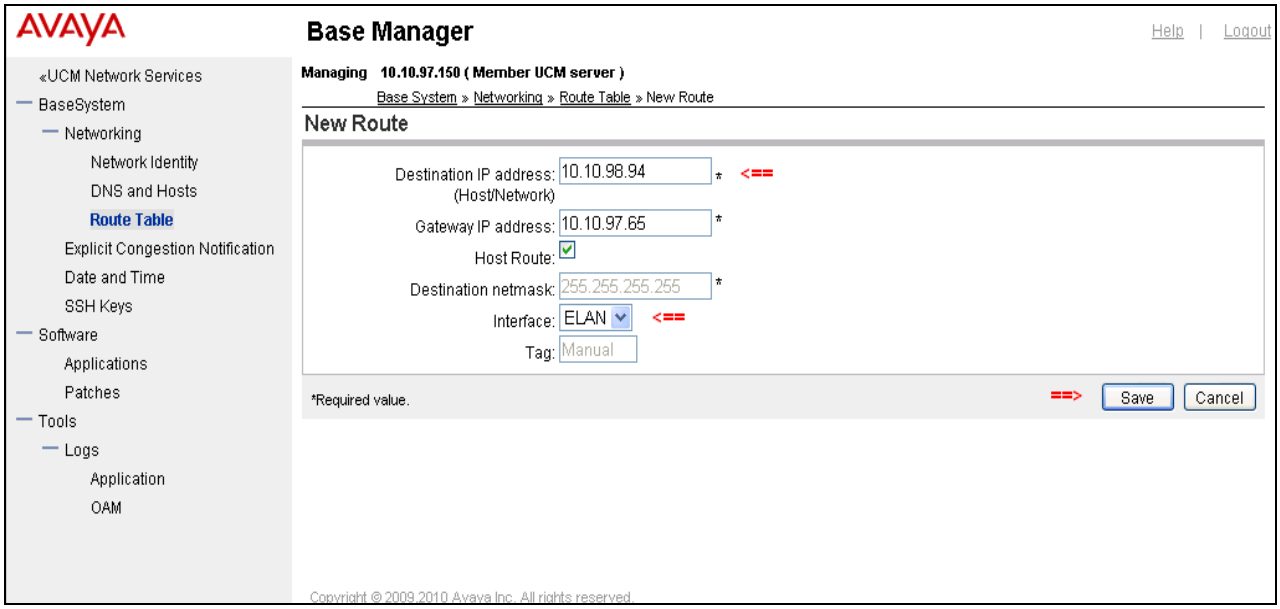
UCM homepage is displayed below.



The homepage of Base Manager is displayed below.



To add a route for the server on which DBA Toolkit application is connecting to ELAN of CS 1000 Co-res system, on the left menu column of the **Base Manager** webpage, navigate to **Base System → Networking → Route Table**. The **Routes** table is displayed on the right side of the **Base Manager** webpage (not shown), click on the **Add** button and enter the IP address of the server where the DBA Toolkit resides as shown below. Then click on the **Save** button to save this change.



Use overlay (LD) 15 to enable CDR feature in customer data block (CDB) of CS 1000 system.

```
>ld 15
REQ: chg
TYPE: CDR

TYPE CDR_DATA
CUST 0
CDR YES
   IMPH NO
   OMPH NO
   AXID YES
   TRCR No
   CDPR YES
   ECDR YES
   BDI  YES
   OTCR YES
   PORT
   CNI  DGTS
   BCAP NO
CHLN 5
FCAF NO
```

Use overlay (LD) 17 to change format for CDR to new.

```
>ld 17
REQ  chg
TYPE parm
FCDR NEW
```

User overlay (LD) 16 to enable CDR feature in route data block (RDB) for SIP and PRI/T1 trunk.

```
>ld 16
REQ  chg
TYPE rdb
CUST 0
ROUT 10
CDR  YES (Call Detail Recording)
INC  YES (CDR records generated on incoming calls)
LAST YES (CDR record printing content option for redirected calls)
TTA  YES (Time To Answer output in CDR)
ABAN YES (Abandoned call records output for this route)
CDRB YES (Abandoned call on busy tone records)
QREC Yes (CDR ACD Q initial connection records to be generated)
OAL  YES (CDR on outgoing calls)
AIA  YES (CDR on Outgoing Toll calls)
OAN  YES (CDR timing starts On Answer supervision of outgoing calls)
OPD  YES (Outpulsed Digits in CDR)
```

Use overlay (LD) 117 to enable buffering for CDR on the CS 1000 system. Note: DO NOT use **ENL BUF ALL** to enable all kinds of buffer. This results in the accumulation of additional data that is not collected by DBA CDR/Traffic Collector and unnecessarily consumes storage space. If this command is inadvertently entered, enter **DIS BUF ALL** and manual to enable CDR or Traffic collection as required. The DIS BUF ALL command flushes any CDR or TRF data that has been buffered on the Call Server since the last DBA Collection Session.

```
>ld 117
=> enl buf cdr
```

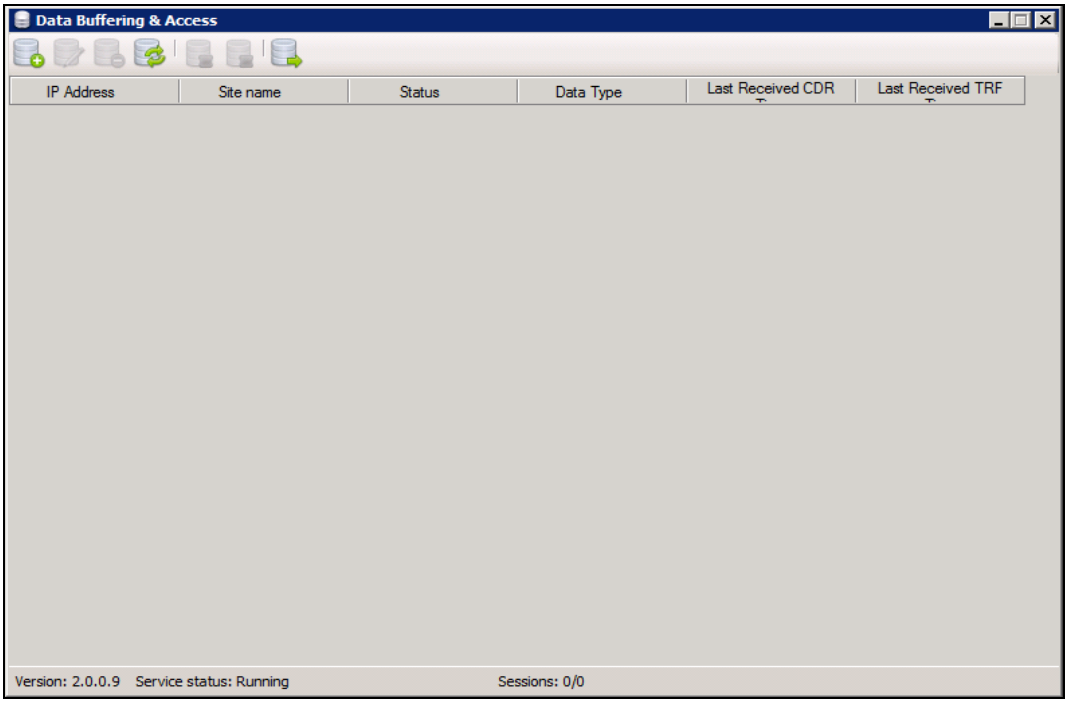
Use overlay (LD) 11 to set class of services Incoming Call Detail Allowed (ICDA) and Abandon Call Allowed (ADBA) for the CS 1000 phones that are recorded by Avotus application.

```
>ld 11
REQ: chg
TYPE: 1120
TN   96 1 0 6
ECHG yes
ITEM cls icda abda
```

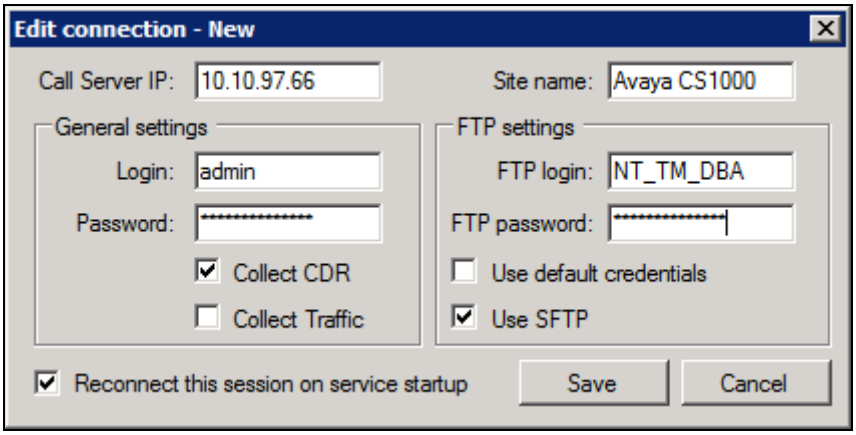
6. Configure Avaya DBA Toolkit

This document assumes that the DBA Toolkit application was properly installed, this section provides the steps on how to configure the DBA Toolkit application to connect to the CS 1000 system.

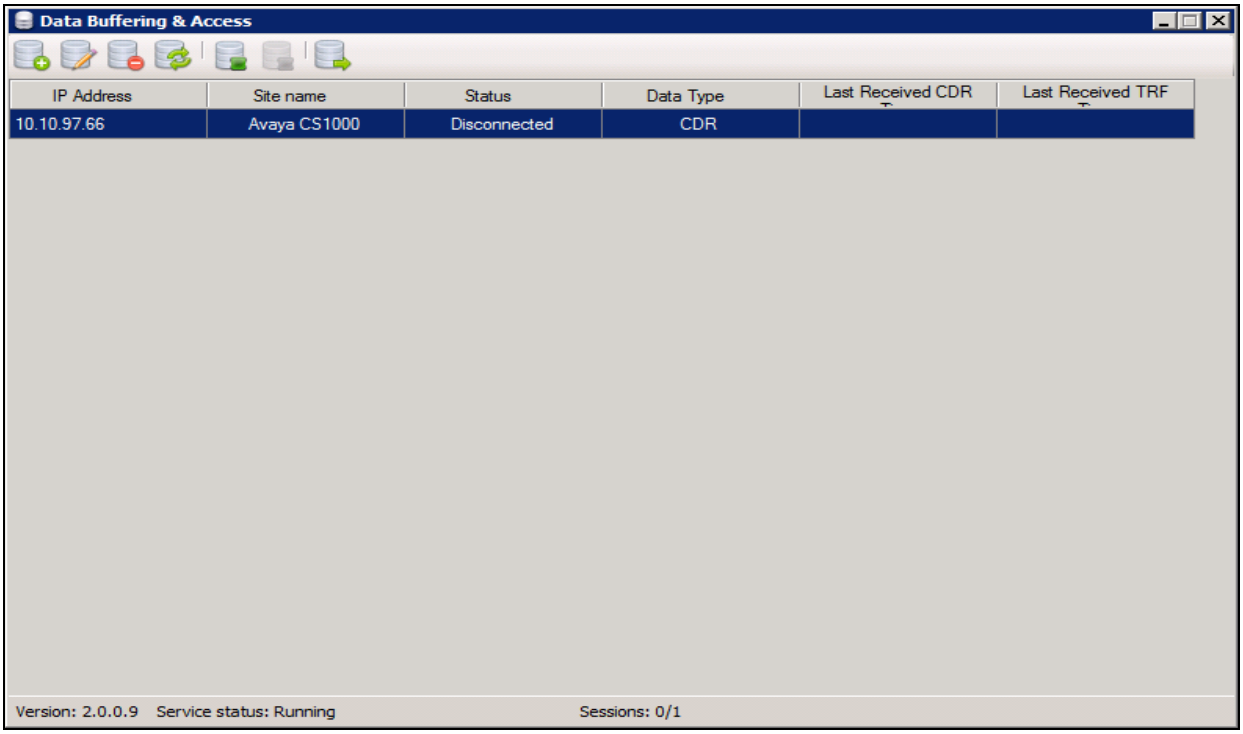
On the server where the DBA Toolkit application was installed, navigate to the folder **C:\Programs File(x86)\Avaya Inc\DBA** and double click on the **dba.exe** to launch the DBA application. The *Data Buffering & Access* window appears as shown below.



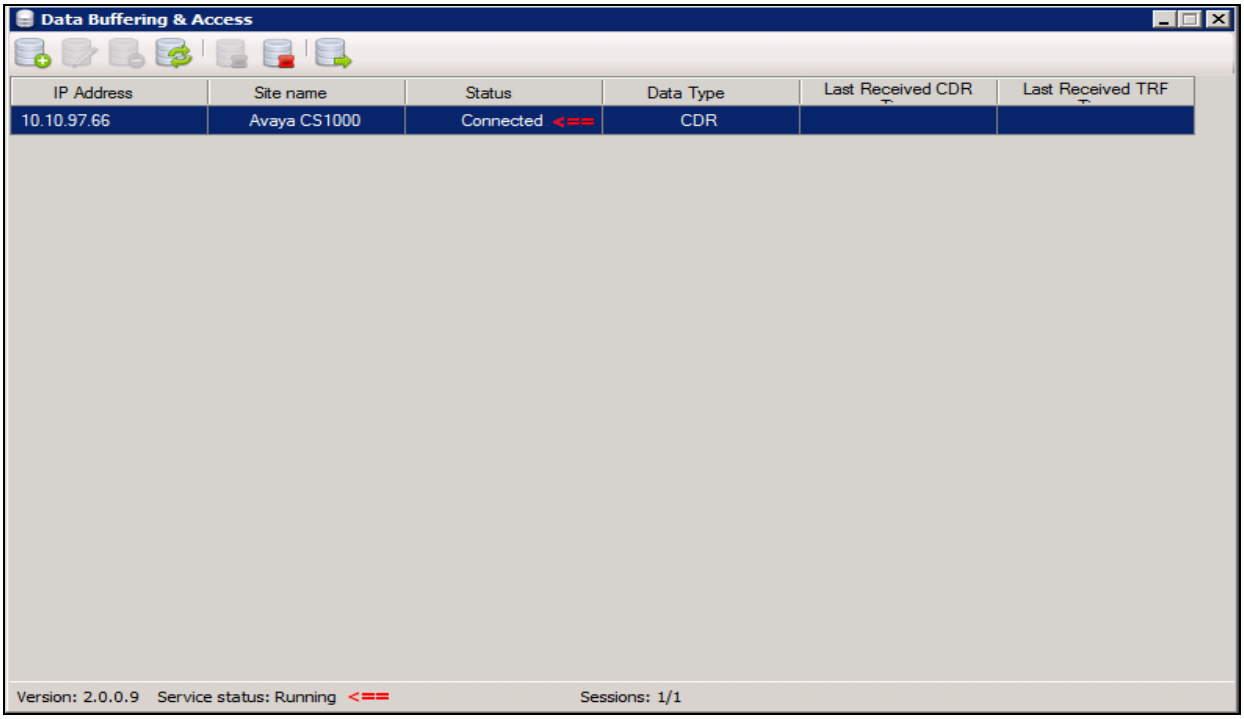
To create a new session on the DBA Toolkit application, from the *Data Buffering and Access* window, click on **Create new session** icon, the **Edit connect-new** window appears as shown below. Enter the IP address of the Call Server of the CS 1000 that the DBA application is going to connect to, the CS 1000's **admin** username and password, and the FTP **NT_S_TM_DBA** username and its password that was created in **Section 5**. Click on **Save** button to save the new connection.



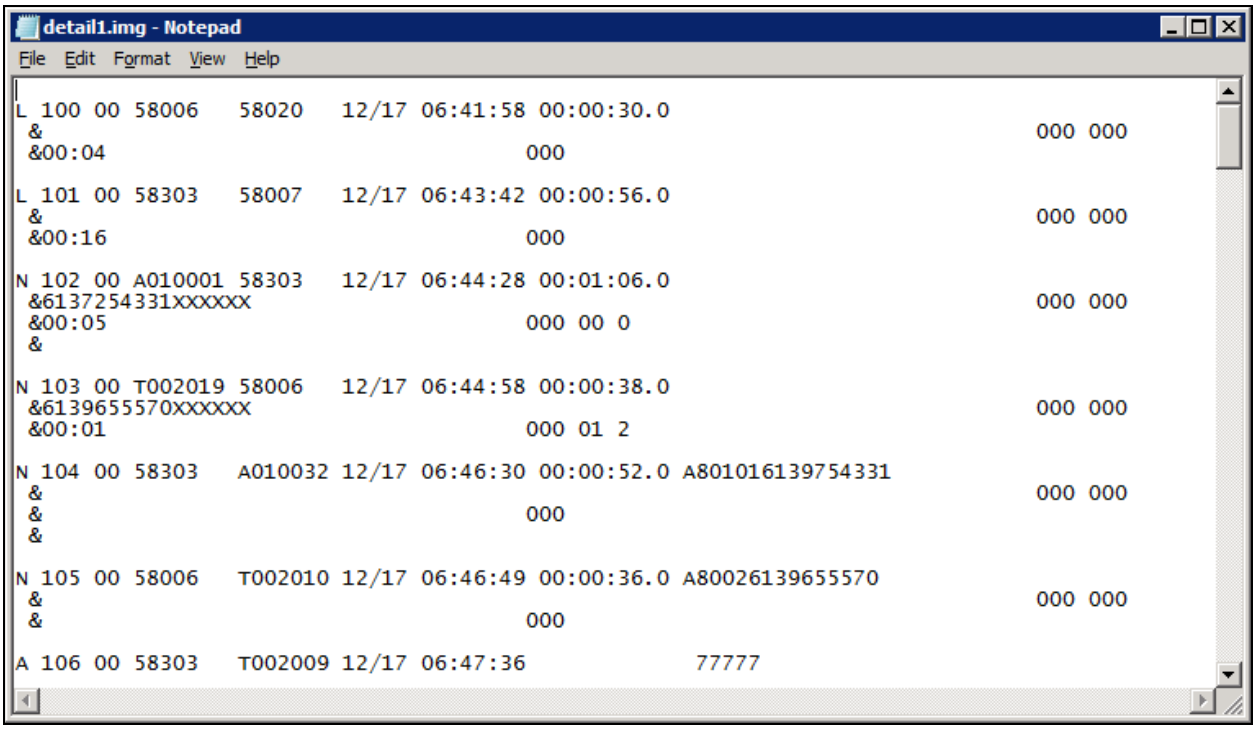
The new connection is now displayed on the main window of DBA Toolkit application.



Click on **Start selected session** icon to start connecting to Avaya CS 1000 system. If the DBA Toolkit application connects successfully to the call server of CS 1000 it shows status as **Connected** in the Status column as screen below.



To verify that call records can be pulled from the CS 1000 DBA buffer and stored on the local database of the DBA tool kit server, place some telephone calls on the CS 1000, wait at least one minute after polling completes and observe the successful call outputs as shown in the screen below.



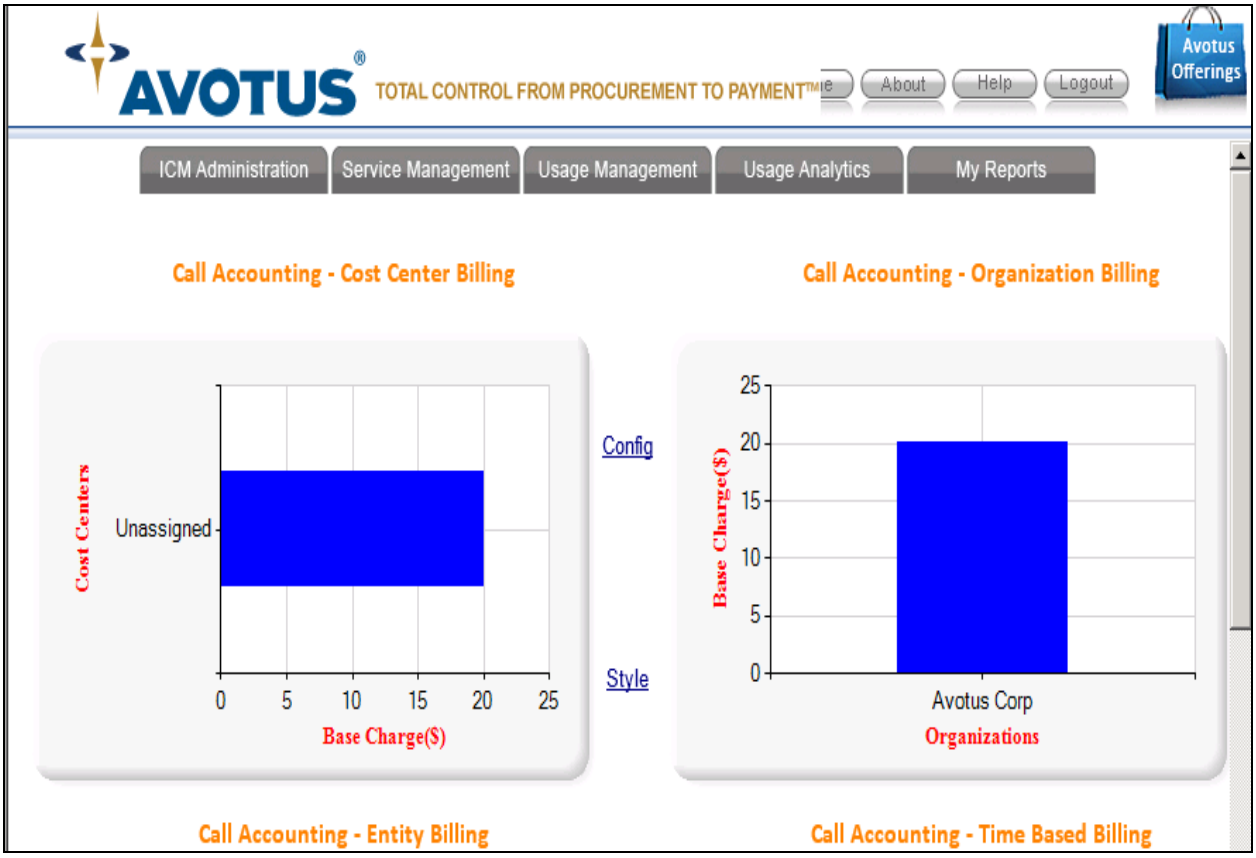
7. Configure Avotus ICM UM 8.3 Application

This document assumes that the Avotus ICM UM 8.3 Application was properly installed and configured by the Avotus engineer. This section only provides the steps to set up the Avotus ICM UM 8.3 to collect the data records from the DBA detail1.img file and process them to generate the call accounting reports.

This example only shows a brief configuration of how to collect the data and generate the call accounting reports for the purpose of verifying that the CDR data was extracted and processed correctly.

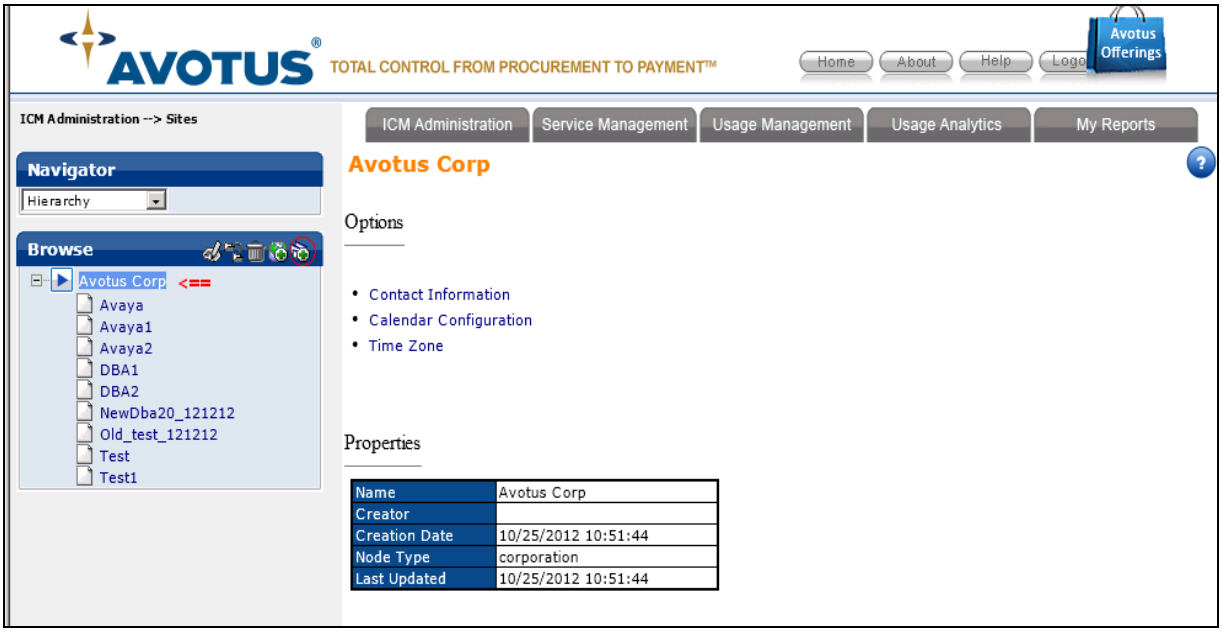
7.1. Administer Sites

Log in to Avotus ICM UM 8.3 Server by double-clicking the Avotus icon in the desktop to launch the Application. Then the below **Avotus** Home page will be displayed.

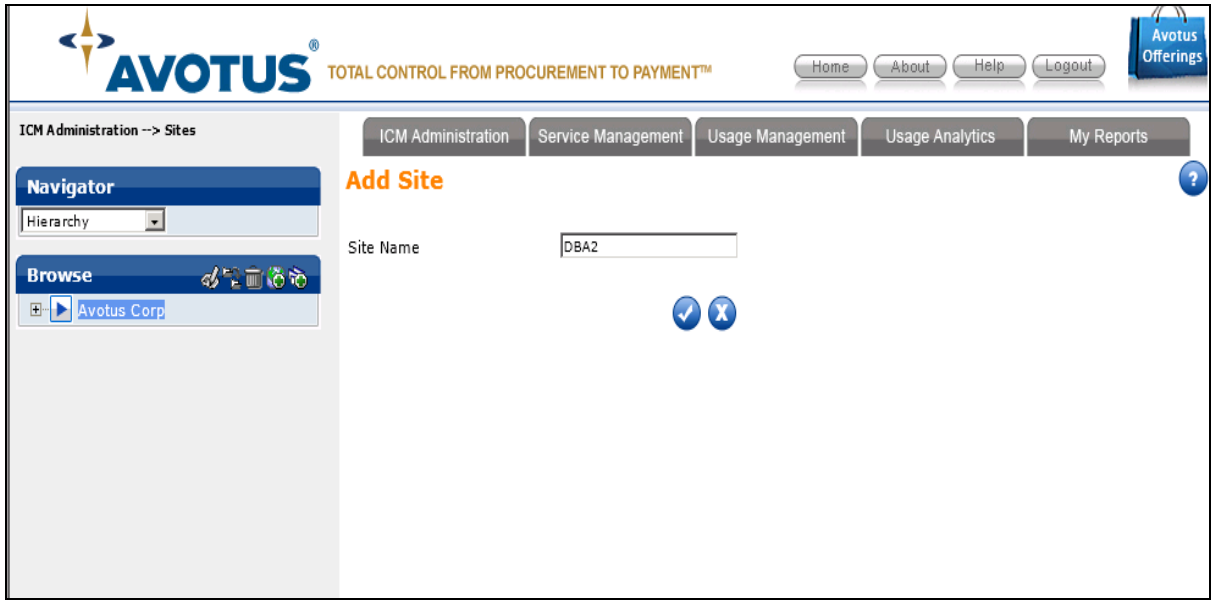


To create a new Site login into Avotus ICM UM Application, in Home Page navigate **to ICM Administration → Sites**:

The **Site** creation page will be displayed on the left side, click on **Avotus Corp** tab under the **Browse** window. The **Add Sites** icon will change to Green (circled), click on the **Add Sites** icon (displayed in below screen).

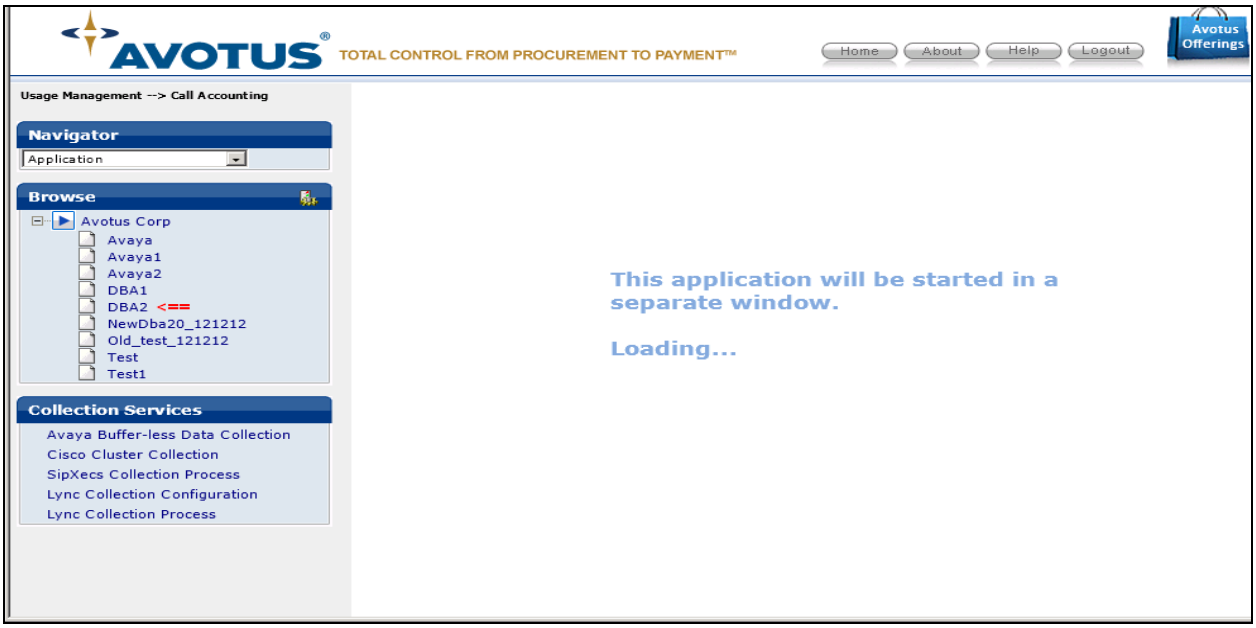


The **Add Site** page is displayed on the right, enter a descriptive name e.g. **DBA2** in the **Site Name** field and click on the **Check** button to add this new site.

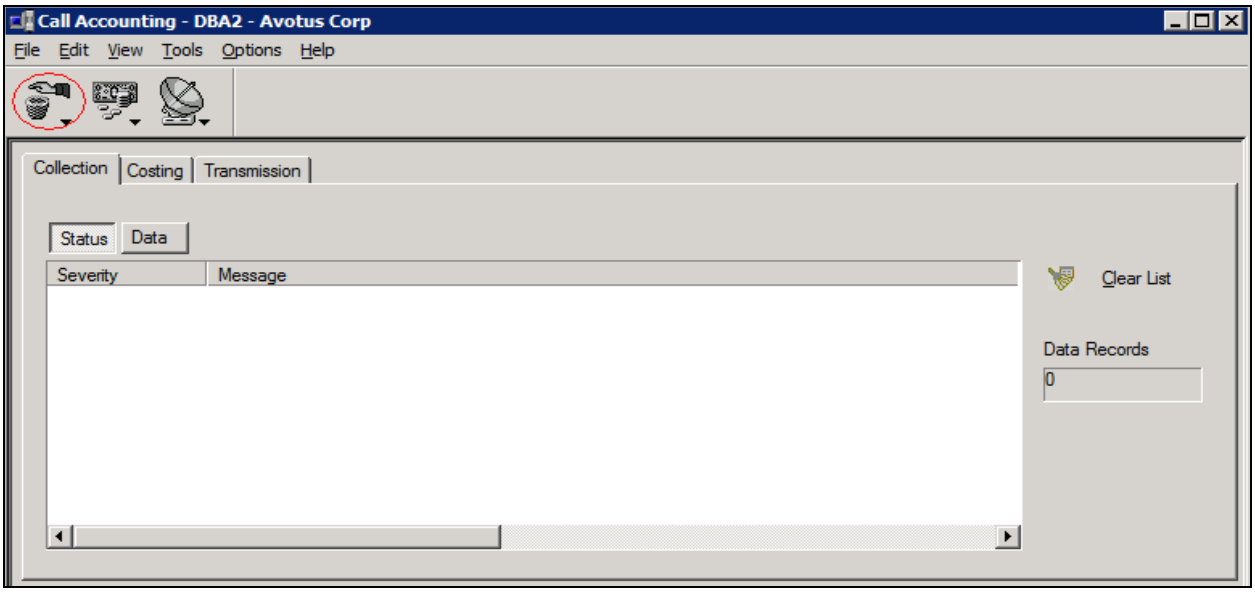


7.2. Administer Call Accounting

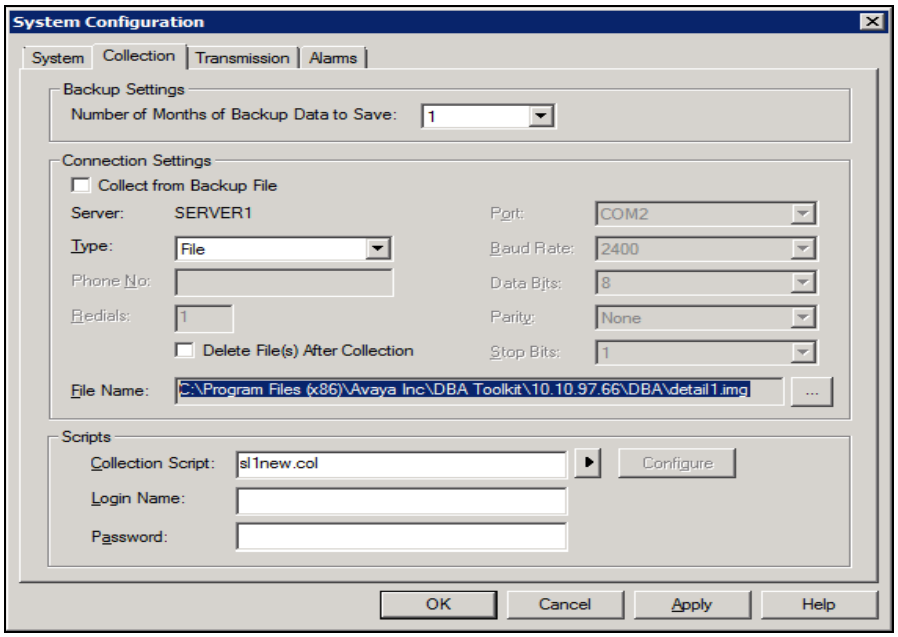
From the homepage, navigate to menu **Usage Management → Call Accounting**. The **Navigator** menu is displayed on the left, select **Application** in the dropdown list. The Avotus Corp application is displayed under **Browse** tab, expand the Avotus Corp application it will list all sites in this application, and click on **DBA2** site as configured in **Section 7.1**.



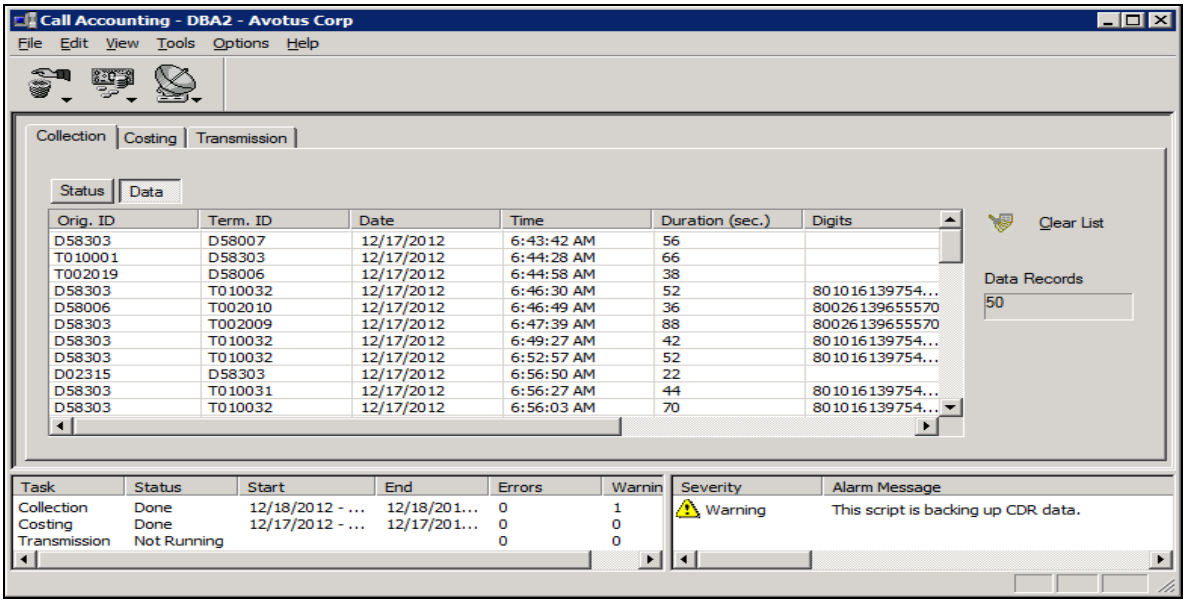
The **Call Accounting – DBA2 – Avotus Corp** window is popped up and shown in the screen below. Click on **Collection** icon (circled in red) and select **Configuration** field (not shown) in the dropdown menu.



The **System Configuration** window is displayed. In the **Collection** tab and in the **Connection Settings** section, select **File** in the **Type** dropdown field and browse to the **detail1.img** file in the folder **C:\Program Files (x86)\Avaya Inc\DBA Toolkit\10.10.97.66\DBA\detail1.img**. In the **Script** section, select **sl1new.col** in the **Collection Script** field. Click **Apply** button to save changes and click **OK** button to close the **System Configuration** window.



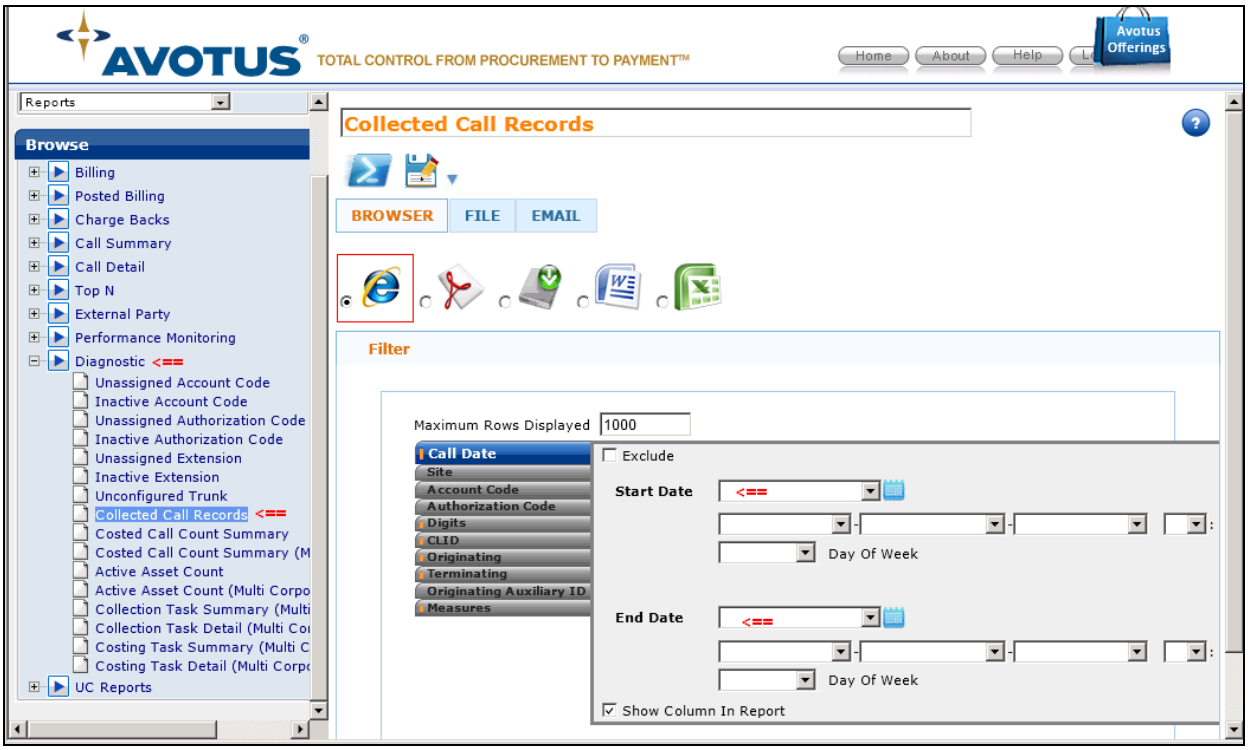
In the **Call Accounting – DBA2 – Avotus Corp** window, click on the **Collection** icon and select **Start** button (screen not shown) to start collecting call records from the detail1.img file. The **Data** sub tab in the **Collection** tab shows all call records collected from the **detail1.img** file, the total call records are shown in **Data Records** box.



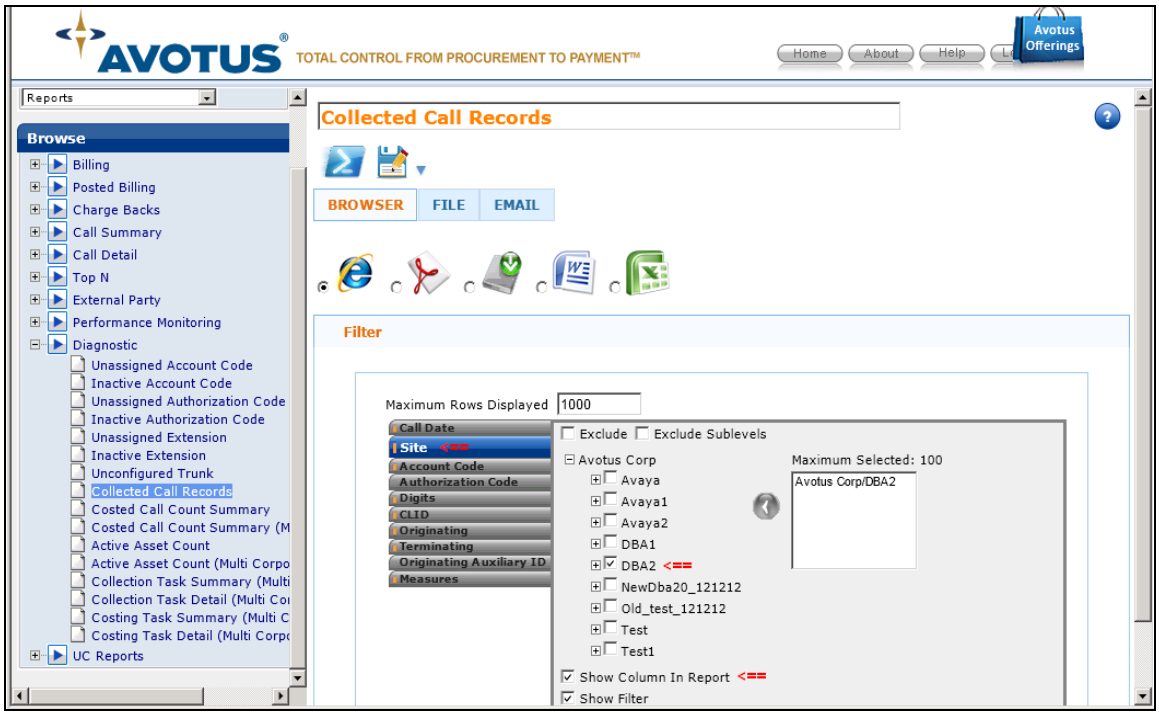
7.3. Administer Reports

Select **Report** in the **Navigator** menu from **Call Accounting** page. All the different types of report are displayed under the **Browse** tab.

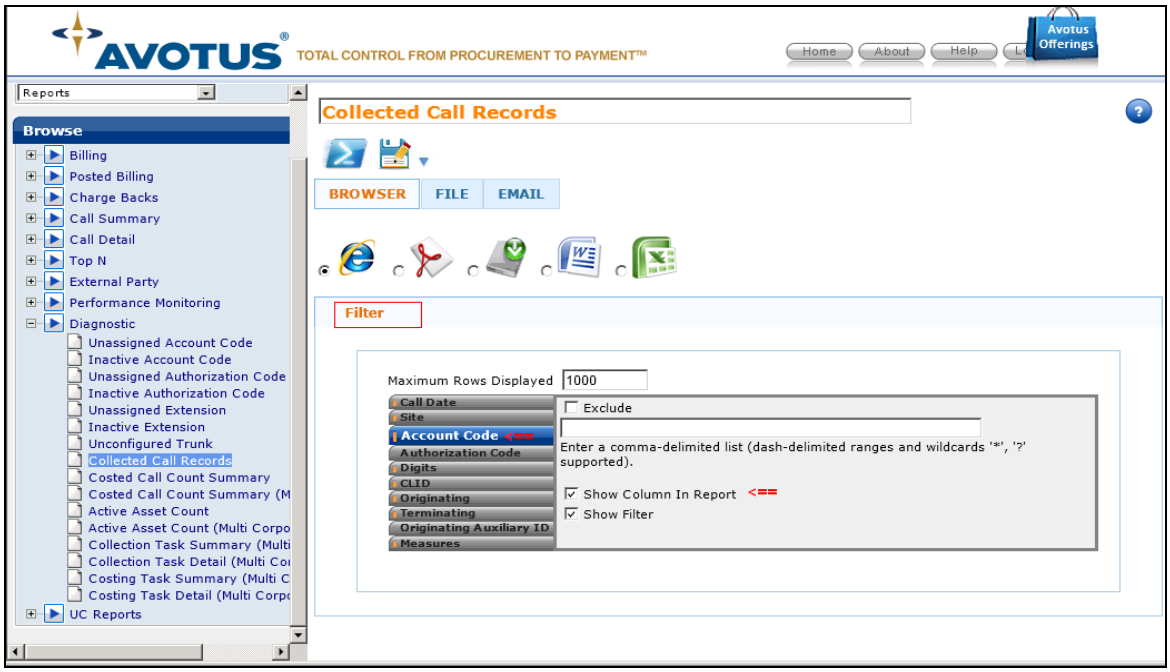
Expand the **Diagnostic** category and select **Collected Call Records** report. The **Collected Call Records** report page is displayed on the right, select **IE** icon in the **BROWSER** section. In the **Filter** section select **Call Date** and select applicable start and end date to get the data between the supplied date range. This will select the current call records.



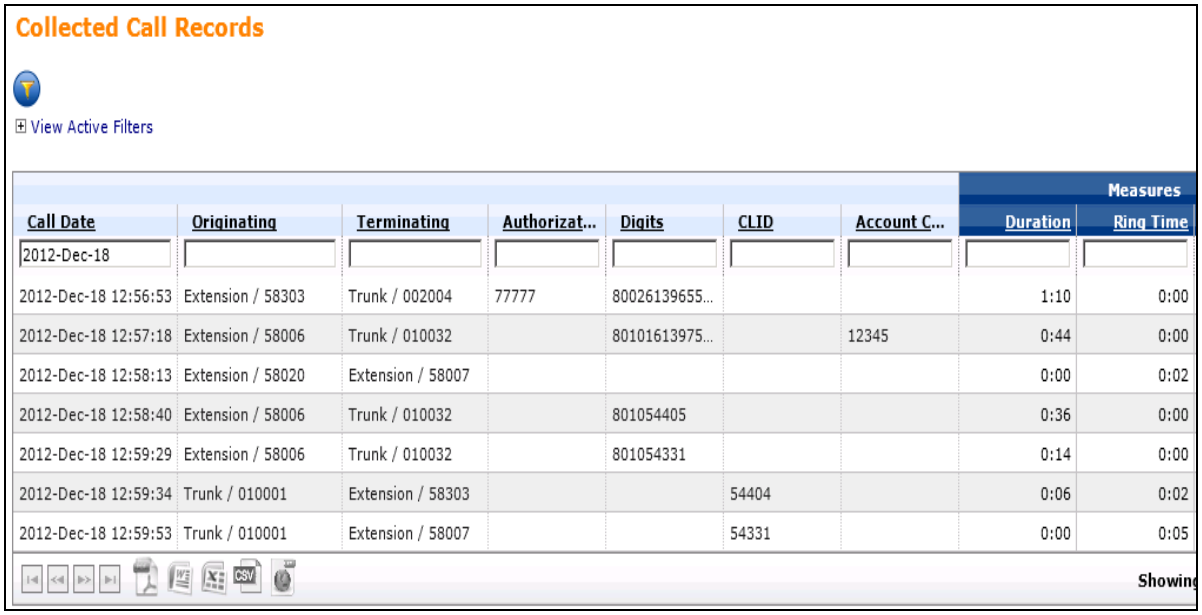
Continue to click on **Site** tab in the **Filter** section. Select **DBA2** site under the **Avotus Corp** tab and check on check box **Show Column in Report**.



Continue to click on **Account Code** in the **Filter** section and select check box **Show Column In Report**. If required, do the same thing for Authorization Code to see the authorization code displayed in report.



Click on **Run Report** icon to run the report. The screen below shows typical report, that Avotus ICM application collects call records from the CS 1000 switch using the detail1.img file of DBA Toolkit application.



Collected Call Records

View Active Filters

							Measures	
Call Date	Originating	Terminating	Authorizat...	Digits	CLID	Account C...	Duration	Ring Time
2012-Dec-18								
2012-Dec-18 12:56:53	Extension / 58303	Trunk / 002004	77777	80026139655...			1:10	0:00
2012-Dec-18 12:57:18	Extension / 58006	Trunk / 010032		80101613975...		12345	0:44	0:00
2012-Dec-18 12:58:13	Extension / 58020	Extension / 58007					0:00	0:02
2012-Dec-18 12:58:40	Extension / 58006	Trunk / 010032		801054405			0:36	0:00
2012-Dec-18 12:59:29	Extension / 58006	Trunk / 010032		801054331			0:14	0:00
2012-Dec-18 12:59:34	Trunk / 010001	Extension / 58303			54404		0:06	0:02
2012-Dec-18 12:59:53	Trunk / 010001	Extension / 58007			54331		0:00	0:05

Showing

8. Verification Steps

The following are typical steps to verify the interoperability between the Avotus ICM UM 8.3 Application and Avaya CS 1000.

- Connect the DBA Toolkit application to the CS 1000 system.
- Configure the Avotus ICM UM 8.3 Application to retrieve call records from the DBA Toolkit application.
- Place various call types such as: internal, outgoing, incoming, PSTN, charge account, authorization code and tandem calls from/to the CS 1000 system which has the CDR feature enabled and verify that the call records are sent to the DBA Toolkit server.
- Observe on the DBA Toolkit application whether the call was correctly stored on the DBA server database with the file name detail1.img.
- From the Avotus ICM UM 8.3 server, start the collection process and generate the detail call record database.
- Generate the call accounting report
- Verify that the report shows correctly information of call records such as Date/Time, Duration, Extension used, Report Dialled Number, Call Type, Auth Call Code, Charge Account …etc.

9. Conclusion

All of the executed test cases have passed and met the objectives outlined in **Section 2**. Avotus ICM UM version 8.3 is considered compliant with the Avaya Communication Server 1000 Release 7.5 and Avaya DBA Toolkit version 2.0.0.9.

10. Additional References

Product documentation for Avaya CS 1000 products may be found at:
https://support.avaya.com

[1] Avaya Communication Server 1000E Installation and Commissioning
[2] Avaya CS 1000 Co-resident Call Server and Signaling Server Fundamentals
[3] Avaya CS 1000 Element Manager System Reference – Administration
[4] Avaya Call Detail Recording Fundamentals Communication Server 1000

Product documentation for Avotus ICM Usage Management 8.3 Application can be found at:
http://www.avotus.com/

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.